

YOUR NEWSLETTER WITH THE LATEST IN RADIATION PROTECTION

THE RADCO REGISTER

VOLUME 11, No. 1

JANUARY 2001

A CECOM RADIATION PROTECTION NEWSLETTER FOR THE US ARMY NATIONAL GUARD



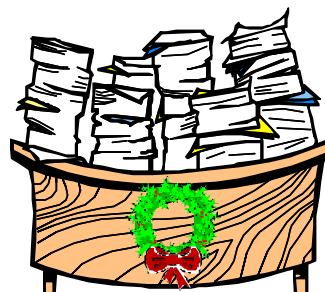
Announcing our new....

Radiation Safety Program Evaluation Schedule

Go for the GOLD !!

... and you may
not be inspected
for two years!

.....(more inside)



*HooooAH...I'm
in compliance!*



YOUR STATE and LOCAL RADIATION SAFETY OFFICERS (RSO): (fill-in)



SRSO: _____ Phone: _____

ASRSO: _____ Phone: _____

LRSO (CSMS): _____ Phone: _____

LRSO (USP&FO): _____ Phone: _____

LRSO (MATES): _____ Phone: _____

LRSO (AASF): _____ Phone: _____

IN THIS ISSUE:



ON GUARD page 3

- CECOMs Inspecting to a Brand New Beat!
- Confused About Posting a Radiation Hazard...READ ON!
- And the Final Jeopardy Answer is...What is a Quarter?
- From the Desk of Cecil B. DMIL... "DMILing the AN/PSG-2, 2A and 2B."
- Is Your Lensatic Compass the Brightest One in the LOT?
- Whatta' Waste! (w/attachment on last page)
- SBCCOM had a little LAM!
- Kudoz for the BOYZ!!
- FY01 Radiation Safety Training Schedule
- A Farewell to All...
- Sad to Report...

PUZZLES & BRAINTEASERS. page 9

- QUICKIE QUIZ
- CROSSWORDS for RSOs

NON-IONIZING CORNER page 10

- "BIOEFFECTS" from Radiofrequency (RF) Radiation (Part 3)

PUZZLES & BRAINTEASERS (solutions) page 11

- QUICKIE QUIZ SOLUTIONS
- CROSSWORDS for RSOs SOLUTIONS

The distribution and content of this newsletter is directed to Army National Guard activities for which the U.S. Army Communications - Electronics Command (CECOM) Directorate for Safety, Radiological Engineering Division, serves as Radiation Safety Staff Officer. This newsletter is a periodic publication summarizing the activities of the National Guard Bureau and CECOM for the previous months including any current radiation safety issues. The primary distribution of this newsletter is to Occupational Health/State Safety Offices, USP&FOs and CSMSs, with local reproduction encouraged.

RADIATION SAFETY STAFF OFFICER:

Mr. Stephen G. LaPoint,
Director
Mr. Joseph M. Santarsiero,
Deputy Director

RADIOLOGICAL ENGINEERING (RE) DIVISION STAFF:

Mr. Richard J. Lovell, x6441
Chief
Mr. Barry Silber, x6440
Health Physicist
Mr. Ken Proctor, x6446
Electronics Engineer
Mr. Hugo Bianchi, x6444
Health Physicist
Mr. Gary Ziola, x6433
Health Physicist
Ms. Alice Kearney, x6432
Safety Specialist
Mr. Burt Cummings, x6426
Health Physicist
Mr. Al Perrella, x6443
Health Physicist

CONTRACTOR SUPPORT TO RE DIVISION STAFF:

Mr. Gary Zimmerman, x6450
Instrument Technician
Ms. Mary Chislett, x6452
Instrument Technician
Mr. Nick Antonelli, x6448
Count Room Technician

MAILING ADDRESS:

Commander, US Army CECOM
ATTN: AMSEL-SF-RE
Bldg 2539, CHARLES WOOD AREA
Fort Monmouth, NJ 07703-5024

VOICE: DSN: 987-3112

COM: (732) 427-3112

FACSIMILE: DSN: 992-6403

LABORATORY ADDRESS:

Commander, US Army CECOM
ATTN: AMSEL-SF-RE (LAB) Bldg 2540
Fort Monmouth, NJ 07703-5024

VOICE: DSN: 987-5370

COM: (732) 427-5370

FACSIMILE: DSN: 987-2667

MESSAGE: CDR CECOM FT
MONMOUTH NJ //AMSEL-SF-RER//

EMAIL: AMSEL-SF@
mail1.monmouth.army.mil

WEB: www.monmouth.army.mil/
CECOM/safety



ON GUARD...

CECOM's Inspecting to a Brand New Beat!

You heard right... Your RSSO has revamped the frequency at which Radiation Safety Program (RSP) evaluations will be conducted for the NGB.

BOTTOM LINE: the better your program the less often you'll be seeing us! So what's the skinny, you ask? If you maintain a compliant program, your state evaluation will be conducted every 2 years. If your program is lacking, (i.e., we find a deficiency), you can expect to see us strolling through your facilities on, at least, an annual basis.



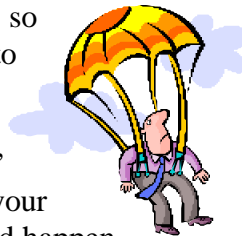
AR 11-9, "The Army Radiation Safety Program," was a driving force behind us modifying our inspection schedule. AR 11-9 requires that an "internal or external agent or agency (RSO, IG, TSG) audits the radiation safety program annually." In order to meet this requirement we will require that each State

RSO perform an annual self-audit of their state RSP. Only those states not being visited by us during the year will require a self-audit. We will send a letter notifying you that your annual self-audit is due along with our RSP checklist to assist you in performing the audit. The results of the self-audit must be retained on file with a copy of the report forwarded to the RSSO (that's us!). Be advised that should we evaluate your state the following year and discover a self-audit inaccuracy, a falsified audit (Big, No No!), repeat findings and/or systemic deficiencies, this will result in your state being noncompliant and



we'll be contacting you to set up your evaluation for the next FY.

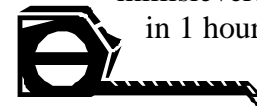
Keep in mind, any incidents/accidents involving radioactive materials or radiation-producing devices could result in a investigation/visit from us so you'll want to have your program "up to snuff" just in case your RSSO should happen to drop in....



Confused About Posting a Radiation Hazard? Read On....

We get a lot of questions concerning the difference between a radiation area and a radioactive material storage area. Are these terms the same? Is it okay to post both a 'radioactive materials' and 'radiation area' sign together at one location? How can I determine what's what? Hopefully by the end of this article we'll have answered your questions. But first, let's start by defining a few things:

Radiation Area: Any area accessible to individuals in which radiation levels could result in an individual receiving a deep dose equivalent in excess of 5 millirem (0.05 millisievert) in 1 hour at



← 30 cm →

30 centimeters from the source or from any surface that the radiation penetrates. Phew....In layman's terms, this means if you are performing a survey of an area using an AN/PDR-77 with the Beta/Gamma

probe and the display indicates a reading greater than 5.00 mR/hr when the probe is 30 cm away from the source, you have a radiation area.

Radioactive Material Storage Area: Any area that contains an amount of radioactive material exceeding 10 times the quantity of such material specified in Appendix C, 10 CFR Part 20, “Quantities of Licensed Material Requiring Labeling,” or if it is required by a specific NRC license.

Now let's look at a few possible scenarios:

1. **What if I have radioactive material that is 10x above the Appendix C limit and I am measuring a dose rate at 30 centimeters from the material of 6 millirem/hr?**

In this case you would have to post both a “Caution - Radioactive Material” sign and a “Caution - Radiation Area” sign.

2. **What if I have radioactive material that is 10x above the**

Appendix C limit and I am measuring a dose rate at 30 centimeters from the material of 4 millirem/hr?

In this case you would only have to post a “Caution Radioactive Material” sign, since the dose rate was below the 5 millirem/hr limit that defines a radiation area.



3. **What sign is required to be posted in a storage area containing only an AN/UDM-2 RADIAC Calibrator?**

In this situation, it is required to post a “Caution -Radioactive Material” sign. This sign is required since the activity is 10x above the Appendix C limit and the dose rate surveyed at 30 centimeters from the AN/UDM-2 is below the 5 millirem/hr limit which defines a

Radiation Area. This dose rate survey would be verified when you perform the required monthly survey of the storage area.

As you can see, in order to determine what type of area you have and what sign is needed you have to follow two steps:

1. Look up the type of radioactive material you possess in 10 CFR Part 20, Appendix C, Quantities of Licensed Material Requiring Labeling or specific NRC license.



2. Perform a survey of an area using an AN/PDR-77 with the Beta/Gamma probe or equivalent. If the display indicates a reading greater than 5.00 mR/hr when the probe is 30 cm away from the source, you have a radiation area.

That's all there is to it. Hope this gives you a better appreciation of the differences between a radiation area and a radioactive material storage area. In the next RADCO we

will go over the specifics of exactly how much activity for each isotope requires posting. Any questions on postings, just give us a holler at the DS.



And the FINAL JEOPARDY ANSWER is.... What is a Quarter?

What is a Quarter? No, we do not mean a quarter of a dollar, or 25 cents, or even that amount of the pie we consumed at the end of Thanksgiving dinner. We're talking about the time-period in which you perform a radiological survey.



So what's the answer, Alex???? Well contestants, the Final Jeopardy answer to "What is a Quarter" is: "A



Quarter means a period of time equal to one-fourth of the year observed by the licensee (approximately 13 consecutive weeks), providing that the beginning of the first quarter in a year coincides with the starting date of the year and that no day is omitted or duplicated in

consecutive quarters. Quarterly is something, which occurs during each quarter.

So why ask, you ask...? Are we finding that some of you surveyors interpret "quarterly" and "quarter" as meaning the same thing. Our Jeopardy Judges say they are not the same.

Surveys of storage and work areas, to include radiation and contamination, are required to be performed quarterly, that is, once in every quarter. Local RSO #1 thinks he can perform his surveys once in every quarter to include up to 175 days between surveys. Although Local RSO #1 is correct, it is not in keeping with the spirit of the Army's definition of quarterly.

Mark your calendar and program your suspense file to indicate surveys are due approximately every 13 weeks and stay out of **DOUBLE JEOPARDY !!**



**From the
desk of
Cecil B.
DMIL.....
"DMILing
the AN/PSG-2, -2A
and -2B"**



Digging through our vast DMIL chronicles to provide you with the best

advice on the demilitarization of radioactive commodities, this latest segment will focus in on the AN/PSG-2, AN/PSG-2A and AN/PSG-2B Digital Message Devices.

Some of you probably have received instructions from the Item Manager to turn-in the AN/PSG-2, AN/PSG-2A and AN/PSG-2B Digital Message Device. (These items contain a display tube that has 3.2 microcuries of the radioactive material, Krypton-85.) The display tube is incorporated as part of the Display Panel Assembly (A1DS1)/ Display Driver Circuit Card Assembly (CCA)(A1A2).

Before you can turn in the AN/PSG-2, AN/PSG-2A and AN/PSG-2B Digital Message Device (End Article Application (EAA)) to the Defense Reutilization and Marketing Office (DRMO), you must remove and dispose of the radioactive components (Display Panel Assembly/ Display Driver CCA) as radioactive waste.

This is how you do it....but only with your Local RSO involved! This work can only be performed at the Direct Support, and higher, level.

Instructions for removing the Display Panel Assembly/Display Driver CCA can be found in Technical Manual (TM)

11-7440-281-30&P, Direct Support Maintenance manual Including Repair parts and Special Tools List, Digital Message Device, AN/PSG-2A (NSN 7025-01-094-5473), 3 September 1982.

Primary Disassembly Procedures are found on pages 2-20 through 2-23; Task Procedures, Section IV, of the TM, and Removal and Replacement Procedures, Display Driver CCA A1A2, are found on pages 2-61 through 2-64; Task Procedures, Task Number 005, Section IV, of the TM. All safety related caution and warning directions must be adhered to.

Once the Display Panel Assembly/Display Driver CCA has been removed, the RSO certifies, on the documentation (DD Form 1348-1), that the radioactive items have been removed and the remaining components are free from radioactivity. The nonradioactive components/EAs can now be transferred to the DRMO and the RSO can dispose of the Display Panel Assembly/Display Driver CCA as radioactive waste.

So that's all there is to it. If you need to get hold of us regarding any other DMIL stuff, contact Barry Silber (alias, Cecil B. DMIL) of our staff.



CECOM's Item Manager for this equipment, Mr. Sylvester Lee, may be contacted on DSN 992-4288; E-mail: sylvester.lee@mail1.monmouth.army.mil.

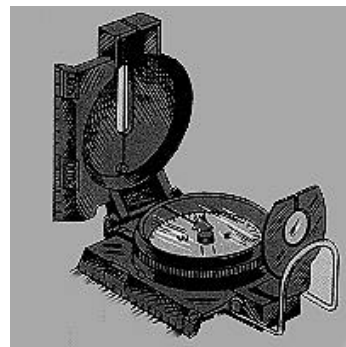


Is Your Lensatic Compass the Brightest One in the LOT?

All you soldiers out there should know that there is only one type of Lensatic Compass that should be used in the field. Its NSN is 6605-01-196-6971. This compass has a current shelf

life of 12 years, meaning that it will provide sufficient illumination for 12 good years. Lensatic compasses use radioactive Hydrogen (Tritium) mixed with luminous material that causes it to produce its own light such that the face can be read in darkened environments.

All other Lensatic Compasses in this category, i.e., NSN 6605-00-846-7618 and 6605-00-151-5337, can no longer be read in darkened environments and should be replaced by NSN 6605-01-196-6971.



The first thing that you should do is to inventory all your on-hand compasses to determine what is out there. So check those wall lockers, floor lockers, foot lockers and even your Dockers ☺. If you have NSN 6605-01-196-6971, you've got the brightest ones in the lot and your're good to go.

If you have NSN 6605-00-846-7618, turn them into your Radiation Safety Officer (RSO) as soon as possible.

NSN 6605-00-846-7618 was condemned due to its lack of luminosity and should not be used because they can be a potential radioactive (Tritium) contamination hazard.

If you have NSN 6605-00-151-5337, requisition the current replacement (the NSN 6605-00-151-5337 shelf life has expired). You do not have to turn NSN 6605-00-151-5337 until you receive your replacement NSN 6605-01-196-6971. If you do, you may get lost in the woods without a compass. NSN 6605-00-151-5337 can still be used for DAYTIME use, but you should not take a chance using them during darkness.

Once you receive the new NSN 6605-01-196-6971 compass, turn in all other versions to your RSO so that they can be properly disposed of.

Remember: Having NSN 6605-01-196-6971 means your MISSION READY and you're future is looking BRIGHT.



WHATTA' WASTE!!!

A gentle reminder... have you prepared to dispose of your low level radioactive waste (LLRW) lately? We haven't received

many recent requests for assistance in disposing of LLRW. We know that the Operations Support Command (OSC) has done a great job packaging/picking up ARNG LLRW, but some of you haven't even requested help. Keep in mind that when we come to your state to do an Ionizing Radiation Safety Program evaluation, we will be reviewing your rad waste records.

To make things easier for you, we've attached a sample memorandum for LLRW disposal assistance. *So, make it a New Year's resolution to get rid of your waste!*



PLEASE NOTE: The most important step in this process is for you to go through your State RSO before sending the request to us.

Also, it is imperative that you include the exact location of the LLRW in the state.

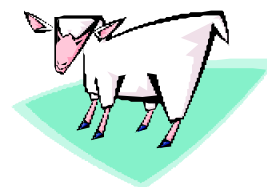
The OSC now requires you provide the COUNTY in which the LLRW is stored.

Commodity information can be obtained from TB 43-0116. If you don't have a copy of the 1 April 1998 edition, you can use the RPO CD, or

access our web page. If you cannot locate the activity of a commodity in the TB, please ensure you perform a beta/gamma survey of the item(s). And, as always, you can give us a call for assistance. **NOTE: ALL TOTAL ACTIVITIES ARE TO BE PROVIDED IN Mega Becquerels (MBq). (See the October 2000 Edition of the RADCO for assistance.)**



SBCCOM had a little LAM!



SBCCOM had a little LAM.....its message was white as snow....and every where Wipe Test samples were taken..... the LAM was sure to go! The LAM we speak of is: R U 30100Z SBCCOM (RI) LOGISTICS ADVISORY MESSAGE (LAM) #00-01.

The LAM says that leak/wipe test sample analysis will no longer be provided by the Rock Island Radiation Test Lab at Rock Island, IL. As the new proponent for the CAM, ICAM, M43A1 and the M22, U.S. Army Soldier and Biological Chemical Command (SBCCOM) will be assuming responsibility for

providing analysis and reporting to the field elements.

Where do Army National Guard (ARNG) maintenance units send leak/wipe test samples for analysis, you ask? In an agreement with SBCCOM, the Radiation Safety Staff Officer for the ARNG, that's us, has the authority to provide analysis and report results of leak/wipe test samples for the CAM, ICAM, M43A1 and M22. Our laboratory mailing address is on page 2.

So, when all is said and done, ARNG maintenance units can still use the CECOM laboratory as they have been doing since May 1998! Our advice to ARNG maintenance units not sending leak/wipe test samples for analysis to the CECOM laboratory... take it on the LAM and get with the program!



KUDOS for the BOYZZZZZZZZ !!

Congratulations for a job well done to all of the Army National Guard (ARNG) students who attended the CECOM Directorate for Safety 40-hour Radiation Safety Officer Course held at Sacramento, California, 11-15 September

2000. We would like to take this opportunity to recognize three of your classmates who distinguished themselves by



achieving the highest final course grades. That honor goes to Brian G. McGrath (CSMS, New Hampshire), Mark A. Payne (CSMS, Washington) and Eric J. Swanson (State Safety Office, Minnesota). Keep up the good work, you and all of your classmates are a credit to the ARNG.



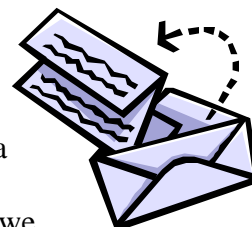
FY01 Radiation Safety Training Schedule

The U.S. Army Communications-Electronics Command (CECOM), Directorate for Safety, as Radiation Safety Staff Officer (RSSO) for the ARNG, is pleased to announce their Radiation Safety Training Schedule for FY01. Two 40-hour Radiation Safety Officer (RSO) Training Courses, two 24-hour Radioactive Commodity Identification and Transportation (RCIT) Training Courses and one 40-hour LORAD RSO Training Course will be offered.

Course locations, dates and **application suspense dates** are as follows:

- a. RCIT, Albuquerque, NM, 27FEB01 – 01MAR01, **04JAN01**.
- b. RSO, Tampa, FL, 05MAR01 – 09MAR01, **09JAN01**.
- c. LORAD RSO, Gulfport, MS, 23APR01 – 27APR01, **06MAR01**.
- d. RSO, New Orleans, LA, 25JUN01 – 29JUN01, **01MAY01**.
- e. RCIT, Chicago, IL, 24JUL01 – 26JUL01, **30MAY01**.

Before you send us a training request, we



would like you to notify, and receive approval from, your SRSO of your desire to attend any of the above listed courses. Training is a major component of a good Radiation Safety Program (RSP), and since the SRSO is in charge of the management of the RSP in your state, keep him or her informed!



A FAREWELL To ALL !!

Recently, I, Craig Goldberg, (being of sound mind and body), transferred from my position as a Health Physicist with the Radiological Engineering Division to a Safety Engineer within our Command, Control, Communications and Computers Systems Engineering Division. (if I was of sound mind and body, I wouldn't have leftright!!)

But seriously, although I am still in the same office as those "RAD"

guys, I will now be providing system safety support in the development of communications and electronics equipment, and will no longer support the ARNG and our other customers on issues relating to radiation safety.

Although I am eager to learn this new area of responsibility, I am saddened by the fact that I will not have the opportunity to stay in touch with those of you with whom I have forged solid working relationships. I will especially miss those relationships forged during happy hour at the 40-hour



RSO course...when radiation physics actually started to make a little sense.

One thing that I was always sure of, whether I was gearing up to teach a training class or to perform a program evaluation, was that I would be met by extremely competent personnel that were eager to learn or to apply what they have learned to make their radiation safety program the best it can be. And, of course, doing so in an enjoyable and fun way. It's been a pleasure working with all of you and I am proud of the achievements we have made over the last several years. Keep up the great work!

Sincerely,



SAD TO REPORT..

You might not have known his name, but you have benefited from his many inventions. Dr. Stanley Kronenberg (known affectionately as "Dr. K."), who was the brains behind much of our modern RADIAC equipment, passed away suddenly on the 9th of

December, at his home near Princeton, New Jersey. He was 73. Dr. K. was our resident expert in radiation and health physics, having worked at CECOM since 1953. He was always willing to help us out or demonstrate one of his newest inventions.

Dr. K. jokingly referred to himself as a "mad scientist," but this world-recognized authority on nuclear radiation technology and detectors had an imaginative mind that never stopped seeking new truths.

During his career, atomic research allowed Dr. K. to witness atmospheric tests and later underground nuclear weapons tests, numerous atomic-bomb tests in Nevada and the Pacific, and over the years lead the "mad scientist" to perform ground-breaking research in his field.

Dr. K. received numerous honors and awards, among them the Meritorious Civil Service Medal, three Department of the Army Research and Development Achievement Awards and the Outstanding FEMA Public Service Award.

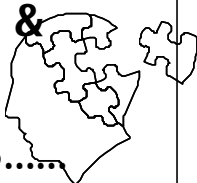
The mad scientist title came about as a joke. On one of his identification badge applications, he jokingly listed "mad scientist" under "occupation" and the clerk

just typed it in that way...hence Stanley became known as the Army's Mad Scientist.

Stanley was known to say he loved research so much he planned never to retire, and we know he meant it. He will be greatly missed by the CECOM Radiological Engineering Division.



PUZZLES & BRAIN- TEASERS.....



QUICKIE QUIZ:

1. Situation: Your unit must submit a low level radioactive waste disposal request. You are required to submit the activity units of the radioactive material in Megabecquerels (MBq). You are requesting disposition instructions for twelve items, each containing 10 curies of tritium. The total activity for your request should be reported as:

- a. 3.70E10 MBq
- b. 4.44E06 MBq
- c. 4.44E12 MBq
- d. 3.70E11 MBq

2. The Radiation Safety Staff Officer (RSSO) for the Army National Guard is located at:

- a. U.S. NRC
- b. U.S. Army SBCCOM
- c. U.S. Army CECOM
- d. U.S. Army TACOM

3. Situation: You perform leak tests on CAMs, M8A1s and ACADAs at your direct support Army National Guard unit. You should mail the leak test samples for analysis to the laboratory located at:

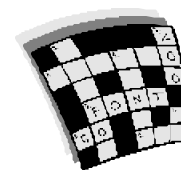
- a. U.S. CECOM
- b. Redstone Arsenal
- c. U.S. Army TACOM-RI
- d. U.S. NRC

4. The MX-7338 radioactive test sample contains:

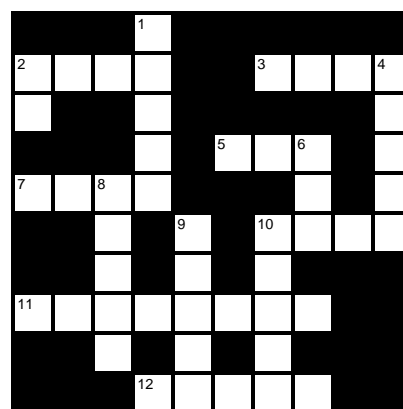
- a. Americium 241
- b. Cesium 137
- c. Krypton 85
- d. Cobalt 60

5. The two main classes of effects from exposure to non-ionizing radiation are:

- a. direct & indirect effects
- b. prompt & delayed effects
- c. thermal & athermal effects
- d. somatic & genetic effects



**C
R
O
S
S** **WORDS** **for** **R
S
S
O**



Across:

2. Limit your _____ to decrease radiation exposure

3. One type of particulate ionizing radiation

5. ACRONYM for radiation absorbed dose

7. Type of electromagnetic radiation

10. Smallest unit of an element

11. Tritium is not a _____ hazard

12. Primary health hazard from DU is heavy _____ toxicity

Down:

1. Process whereby an unstable nuclide loses energy: radioactive _____
2. Highest one meter reading from a radioactive shipment (abr)
4. A RADIAC calibrator containing SR-90? _____-2
6. Agency that regulates shipments of radioactive material (abr)
8. Large exposure over a short period of time
9. Equal to 3.7×10^{10} dis/sec, or one gram of RADIUM-226
10. ACRONYM for as low as is reasonably achievable

**GOOD LUCK:
...the answers
are on the last
page!!**

NONIONIZING CORNER

"BIOEFFECTS" from RADIOFREQUENCY (RF) RADIATION (Part 3)

In the last segment, we discussed some of the methods our body utilizes to

keep itself within some nominally acceptable temperature range. This range of temperatures varies somewhat from person to



person but it is centered at about 98.6 degrees Fahrenheit. When we feel cold, our body reacts to

insure we don't get too cold. When we feel too warm, the body takes action to insure it is not overheated. Much like the thermostat on the wall of your home, the body tends to "regulate" its internal temperature. It makes no difference whether the excessive heat energy, for example, stems from a brooding infection somewhere in the body, the flame of a nearby stove, the warmth of a kerosene heater or a nearby transmitting antenna. This added heat energy must be removed to prevent organ and tissue damage.

Too much heat and you could end up like poor



**FROSTY
SNOWMAN....** the

Some of the ways our body reacts to excessive heat energy includes increasing the

rate at which our heart beats (heart rate), increasing sweat gland activity (we sweat more), increasing the radiant energy being emitted by our bodies (invisible infrared energy) and increasing our respiration (breathing) rate. Every time we exhale, our lungs not only give off carbon dioxide, they also transfer heat energy from the inside of our body to our "breath."



This is visible when we breathe normally outside on a cold winter's day.

What happens if more heat energy is added than can be safely removed?

A problem occurs when there is more heat energy added than can be removed over some period of time. Remember that it's not necessarily the *amount* of heat added but *how quickly* it is added and *how long* that added heat is permitted to affect our bodies. It's kind of like a fuse in your house or car. It's not so much the fact that an excessive current is flowing through the fuse that melts it, it's *how long* that excessive current is allowed to pass through the fuse that eventually causes the element inside to melt. The time

element is critical. True, your hand can sustain an exposure to the flame of a match, but for how long? See what we mean?

If thermal energy added to the body is excessive and that heat energy is not removed quickly enough, or the body cannot or does not utilize one or more of its thermal regulation methods (some discussed above), the body will react by initiating one or more extreme measures to save itself. Some of those measures include shutting down organs. Eventually, death may occur.

This sounds serious, doesn't it? It IS! What's more attention-getting is that what we've presented here is how the body NORMALLY



reacts. What do you think would happen if you had just finished a session of personal training (PT) and your body was already trying to rid itself of excessive heat energy, or you were out in the hot sun all afternoon, or were on some form of medication (or a combination of some or all of these things) and THEN got a dose of nonionizing radiation? Your chances for thermal

overload (called hyperthermia) would be greatly multiplied.

You see? It's not necessarily the obvious things that may cause bodily harm, it's a combination of those factors and the other less obvious factors that MUST be taken into consideration when evaluating the risk (or potential risk) for ANY exposure to nonionizing radiation energy.



QUICKIE QUIZ SOLUTIONS:

1. Situation: Your unit must submit a low level radioactive waste disposal request. You are required to submit the activity units of the radioactive material in Megabecquerels (MBq). You are requesting disposition instructions for twelve items, each containing 10 curies of tritium. The total activity for your request should be reported as:

- a. $3.70E10$ MBq
- b. $4.44E06$ MBq**
- c. $4.44E12$ MBq
- d. $3.70E11$ MBq

2. The Radiation Safety Staff Officer (RSSO) for the Army National Guard is located at:

- a. U.S. NRC
- b. U.S. Army SBCCOM
- c. U.S. Army CECOM**
- d. U.S. Army TACOM

3. Situation: You perform leak tests on CAMs, M8A1s and ACADAs at your direct support Army National Guard unit. You should mail the leak test samples for analysis to the laboratory located at:

- a. U.S. CECOM**
- b. Redstone Arsenal
- c. U.S. Army TACOM-RI
- d. U.S. NRC

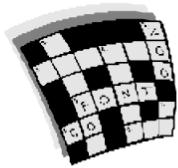
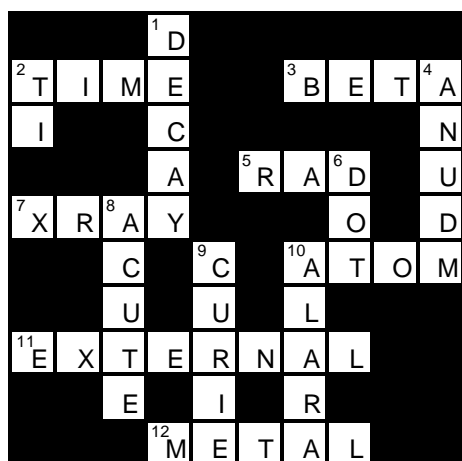
4. The MX-7338 radioactive test sample contains:

- a. Americium 241
- b. Cesium 137
- c. Krypton 85**
- d. Cobalt 60

5. The two main classes to effects from exposure to non-ionizing radiation are:

- a. direct & indirect effects
- b. prompt & delayed effects
- c. thermal & athermal effects**
- d. somatic & genetic effects

**C
R
O
S
S**
WORDS
for
**R
S
O
S**
SOLUTIONS:

YOUR OFFICE SYMBOL (385-NGB)

DATE

MEMORANDUM THRU State Radiation Safety Officer...

MEMORANDUM FOR Commander, U.S. Army Communications-Electronics Command,
ATTN: AMSEL-SF-RE, Fort Monmouth, NJ 07703-5024

SUBJECT: Request for Radioactive Waste Disposal Instructions

1. Request you process the enclosed listing for (state of) _____, and forward to the Operations Support Command, Radioactive Waste Disposal Team, for disposal instructions.

2. Please have disposal instructions sent to:

The Adjutant General, State of _____
ATTN: State Radiation Safety Officer, etc...
City, State Zip

3. Our POCs are (SRSO) _____, DSN _____ or Commercial;
and/or (USP&FO LRSO) _____, DSN _____ or Commercial _____ .

4. The LLRW is located at (the USP&FO), Building #____, town, state.

Enclosure

SIGNATURE BLOCK

(SAMPLE)

YOUR OFFICE SYMBOL (385-NGB)

SUBJECT: Request for Radioactive Waste Disposal Instructions, __ARNG

<u>National Stock Number</u>	<u>Isotope</u>	<u>Activity (Bq)_____</u>	<u>Nomenclature</u>	<u>Quantity (ea)_____</u>	<u>Total Activity MBq/(mCi)_____</u>
1. 6605-00-846-7618	H ³	4.44E9	Compass	6	2.66E04MBq (7.19E02mCi)